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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/225,687	01/06/1999	RANDELL L. MILLS	62-226-1	2097

20736 7590 11/10/2004

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EXAMINER	
TSANG FOSTER, SUSY N	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)
	09/225,687	MILLS, RANDELL L.
	Examiner	Art Unit
	Susy N Tsang-Foster	1745

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 28 May 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on 28 May 2004. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☒ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, ~~the proposed amendment(s) a)☐ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended~~. No amendment submitted, but only a request for reconsideration. (SS) 11/04

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: None.

   Claim(s) objected to: None.

   Claim(s) rejected: 1-84 and 99-104.

   Claim(s) withdrawn from consideration: None.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☒ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). 20040528.

10. ☒ Other: See Continuation Sheet

Continuation of 10. Other: Attachments:
1) PTO-892,
2) Copy of the Appendix by Dr. Bernard Souw, Patent Examiner in Art Unit 2881, and
3) copy of the document titled "Hydrocatalysis Technical Assessment, Prepared for Pacificorp, prepared by Technology Insights, dated August 2, 1996", submitted by applicant on 7/17/2002 in copending application 09/669,877.

Continuation of 5. does NOT place the application in condition for allowance because:

Applicant's response, affidavit, and appendix filed on 5/28/2004 contain identical arguments which have been presented of record that have been considered by the Examiner in the previous office action. The appendix filed on 5/28/2004 is identical to that filed on 2/22/2002 which has been addressed in the previous office action. Therein, applicant asserts on page 161 of the appendix that he has disproved conventional quantum mechanics and that his own theory represents physical reality. In response, applicant's theory is fundamentally flawed both physically and mathematically for reasons given in the previous office action. Further reasons showing applicant's theory to be fundamentally flawed can be found in the attached appendix by Dr. Bernard Souw, patent Examiner in art unit 2881, which was cited in copending case 09/513,768 that also claims the hydrino atom as the basis of the invention therein. The arguments given in the appendix by Dr. Bernard Souw demonstrating the incorrectness of applicant's theory complement the arguments in sections 4 through 10 of the ATTACHMENT TO RESPONSE TO APPLICANT'S ARGUMENTS in paper #9 mailed on 8/23/2001 which was also attached to the previous office action for applicant's convenience. The Examiner disagrees with applicant's conclusion that quantum mechanics is incorrect for reasons given in the Appendix by Dr. Bernard Souw and in the ATTACHMENT TO RESPONSE TO APPLICANT'S ARGUMENTS in paper #9.

From applicant's arguments of record it is evident that he rejects a century of work in quantum mechanics by those of skill in the art such as Nobel Laureates Schrodinger, Dirac, and Feynman as discussed in the ATTACHMENT TO RESPONSE TO APPLICANT'S ARGUMENTS attached to paper #9 mailed on 8/23/2001 (hereinafter referred to as "ATTACHMENT in paper #9") in favor of his own theory of the hydrogen atom that allegedly predicts a new form of the hydrogen atom known as the hydrino atom. However, applicant's theory of the hydrino atom fails to be a scientifically credible alternative in place of the conventionally established theory of quantum mechanics for the hydrogen atom for reasons given in the ATTACHMENT in paper #9.

The existence of the hydrino atom is contrary to the known laws and theories of chemistry and physics. Applicant's theory of the hydrino atom predicts a new form of the hydrogen atom having energy states represented by fractional quantum numbers that are below the conventional ground state of the hydrogen atom. These energy states having fractional quantum numbers are contrary to the conventionally accepted energy states of the hydrogen atom having positive integer quantum numbers predicted by quantum mechanics that have been successfully verified by decades of independent, reproducible experimental results as stated in ATTACHMENT in paper #9.

As deduced from the experimentally observed spectrum of the H atom, it is well-established that it has a ground state energy level ($n = 1$) as well as excited energy states corresponding to integer values of $n > 1$. There is no experimental evidence besides applicant's own interpretation of his data, that there are allegedly novel energy states corresponding to non-integer or fractional values of n for the hydrogen atom. Moreover, the spectrum of the H atom is accurately predicted by the well-known modern theory of quantum mechanics based on Schrodinger's equation and refinements thereof such as Dirac's equation as discussed in the ATTACHMENT in paper #9.

There is no established modern theory of science that predicts energy levels of the hydrogen atom that would fall below the ground state energy of the hydrogen atom having fractional quantum numbers as postulated by applicant's theory. Indeed, scientists have continued to refine quantum mechanics to apply it to vastly more complex entities than the H atom and it is agreed amongst those of skill in the art that the properties of the hydrogen atom to date have been fully characterized to an extraordinarily high degree of accuracy as discussed in the ATTACHMENT in paper #9.

Applicant also asserts that he has submitted a multitude of analytical studies experimentally confirming the disclosed novel reaction of atomic hydrogen, which produces hydrogen in fractional quantum states that are at lower energies than the traditional "ground" ($n=1$) state. In response, applicant's experimental results have already been addressed in the ATTACHMENT to paper #9 and can be explained by conventional science which does not involve the existence of the hydrino atom.

As a case in point of scientific data that can be explained by conventional science without the need to use applicant's scientifically implausible theory of the hydrino atom, applicant's attention is directed to the document titled "Hydrocatalysis Technical Assessment, Prepared for Pacificorp, prepared by Technology Insights, dated August 2, 1996", submitted by applicant on 7/17/2002 in copending application 09/669,877. According to the document on page 5, the applicant of the present application is the founder of Hydrocatalysis Power Corporation (HPC), now known as Blacklight Power, Inc. Pages 20-21 of the document states that spectral data taken from the reference S. Labov and S. Bowyer, "Spectral Observations of the $_2$Extreme Ultraviolet Background", The Astrophysics Journal, 371,

810 (1991), were evaluated by HPC for indications of hydrino. HPC assigned peaks in the wavelength region of 80 to 650 Å to hydrino transitions. As shown in Table 4-1 on page 21 of the document, the HPC assignments contradict the alternative assignments made by the authors of the journal paper.

Page 21 of the document also states that Bowyer (an astrophysicist and author of the astrophysics journal paper cited above) disputed the HPC interpretation of the data and that the paper on the HPC interpretation submitted to the Astrophysical Letters and Communications was not accepted for publication. The document also states on page 21 that the low energy hydrogen concept and its implications regarding data interpretation has not received general review or acceptance by the astrophysics community. Thus, applicant's assertions regarding the existence of hydrino based on observations of radiation spectra from space, i.e., astrophysical data, have not been accepted by the astrophysics community as evidenced by the document submitted by applicant on 7/17/2002 in copending application 09/669,877 since a more credible scientific alternative exists to explain the spectral data.

Applicant has submitted plasma data that allegedly prove the existence of the hydrino atom in the information disclosure statements filed on 5/28/2004. It is noted that these references submitted are applicant's own work which have not been reproduced and verified by independent laboratories. Nevertheless, the Examiner is unpersuaded by applicant's plasma data. For example, applicant's interpretation of the observation of line broadening in the plasma data due to a resonance transfer mechanism (r-t mechanism) is unconvincing because alternative conventional explanations are equally plausible to explain the line broadening observed in the plasma data. It is well known that hydrogen transitions are easily perturbed by the plasma and microwave fields, since the atomic hydrogen has only one electron that is not protected by screening effects, especially those having large l quantum numbers. Anomalous broadening of hydrogen lines in microwave plasma has been subjected to experimental and theoretical studies for decades (see Luggennholscher et al. "Investigations on Electric Field Distributions in a Microwave Discharge in Hydrogen", obtained from <URL: http://www.phys.tue.nl/FLTPD/Luggenhoelscher.pdf>).

In the reference by Mills et al. entitled "Comparison of Excessive Balmer α Line Broadening of Inductively and Capacitively Coupled RF, Microwave, and Glow Discharge Hydrogen Plasmas with Certain Catalysts", IEEE Transaction on Plasma Science, Vol. 31, No. 3, June 2003, pp. 338+ submitted by applicant (hereinafter referred to as 'Mills et al. "Comparison of Excessive Balmer α Line Broadening" document'), applicant asserts that the broadening of the hydrogen Balmer α line in microwave discharge plasma of a mixture containing predominantly argon and small amounts of hydrogen can be explained by a radiative transfer mechanism involving the species providing a net enthalpy of a multiple of 27.2 eV and atomic hydrogen (see p. 339 of Mills et al. "Comparison of Excessive Balmer α Line Broadening" document). However, conventional alternative theories can explain the broadening of the Hα lines in the microwave discharge plasma of the Ar/H mixture as evidenced by Luque et al. "Experimental research into the influence of ion dynamics when measuring the electron density from the Stark broadening of the Hα and Hβ lines", J. Phys. B: At. Mol. Opt. Phys. 36 (2003) pp. 1573-1584 and by Luggennholscher et al. "Investigations on Electric Field Distributions in a Microwave Discharge in Hydrogen", obtained from <URL: http://www.phys.tue.nl/FLTPD/Luggenhoelscher.pdf>.

Luque et al. carried out an analogous microwave discharge plasma experimental setup (see Figure 1 of Luque et al.) involving Ar gas where H was present in a trace amount. Luque et al. explained that under their operating conditions, the whole broadening attained by the profiles of the Balmer Hα line is the result of two Lorentzian broadenings, the Stark (ωS) and van der Waals (ωW) ones and two Gaussian broadenings, the Doppler (ωD) and the instrumental (ωI) ones (see p. 1580 of Luque et al.). It appears in the Mills et al. "Comparison of Excessive Balmer α Line Broadening" document, applicant has not taken into account broadening of the line profile by the two Lorentzian broadenings in their microwave discharge plasma experiment involving the Ar/H mixture. Applicant state on page 344 of the Mills et al. "Comparison of Excessive Balmer a Line Broadening" document that only a Gaussian profile was used to fit the line profile of the Balmer α line. It appears that applicant ignored significant contributions to the line broadening due to dynamic Stark broadening (one of the components of Lorentzian broadening) in interpreting his own data (see p. 346).

Luque et al. was able to fully account for the line broadening of the Balmer Hα line in a gas mixture comprising Ar and H only with two Lorentzian components and two Gaussian components as stated above. These components fully account for the broadening of the Balmer Hα line due to proper analysis of the electron density and ion dynamics in the system by Luque et al. There is no need to use a resonant energy transfer mechanism to explain the broadening of the Balmer Hα line when an alternative conventional explanation offered by Luque fully accounts for the broadening of the Hα line in a mixture of H2/Ar in a microwave discharge experiment.

Furthermore, another microwave discharge experiment by Luggennholscher et al. ("Investigations on Electric Field Distributions in a Microwave Discharge in Hydrogen", obtained from <URL: http://www.phys.tue.nl/FLTPD/Luggenhoelscher.pdf>) that is similar to that disclosed in the Mills et al. "Comparison of Excessive Balmer α Line Broadening" document involving a hydrogen and an argon mixture shows anomalous line broadening of the Balmer Hα line that can be attributed to microwave plasma effects. Applicant's assertion that the extraordinary line broadening is due to a radiative transfer mechanism is not convincing because the line broadening can be due to conventional effects as explained above. Applicant has assumed that the Doppler effect (the Gaussian component) was the main cause of the line broadening in microwave discharge plasmas as evidenced by the Mills et al. "Comparison of Excessive Balmer α Line Broadening" document. The microwave plasma contains an internal electric field due to the ions and electrons present in the plasma and this internal electric field causes dynamic Stark broadening of the Balmer H α line. Applicant's incorrect assertion regarding the mechanism of this line broadening in the Balmer H α line is enough to disqualify all of applicant's arguments based on anomalous or excessive line broadening in microwave plasmas due to a resonance transfer (r-t) mechanism.

Thus, in view of the serious mathematical and scientific flaws in applicant's theoretical foundation for his invention that is contrary to known science, and the lack of independent, reproducible experiments that verify the existence of the hydrino atom, applicant has failed to provide preponderance of evidence to support his claims.

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ Susy Tsang-Foster

Susy Tsang-Foster
Primary Examiner
Art Unit 1745